

PATENT COOPERATION TREATY

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NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

United States Patent and Trademark
Office
(Box PCT)
Crystal Plaza 2
Washington, DC 20231
ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 09 June 1998 (09.06.98)	
International application No. PCT/GB97/02907	Applicant's or agent's file reference N.71868A GCW
International filing date (day/month/year) 21 October 1997 (21.10.97)	Priority date (day/month/year) 21 October 1996 (21.10.96)
Applicant WRIGLEY, Stephen, Keith et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:

18 May 1998 (18.05.98)

☐ in a notice effecting later election filed with the International Bureau on:2. The election ☒ was☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer S. Mafla
Facsimile No.: (41-22) 740.14.35	Telephone No.: (41-22) 338.83.38

PATENT COOPERATION TREATY

REC'D 13 OCT 1998
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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference N.71868A GCW	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (PCT/IPEA/416)	
International application No. PCT/GB97/02907	International filing date (day/month/year) 21/10/1997	Priority date (day/month/year) 21/10/1996
International Patent Classification (IPC) or national classification and IPC C07D309/32		
Applicant XENOVA LIMITED et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 4 sheets, including this cover sheet.

- ☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 1 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 18/05/1998	Date of completion of this report 09.10.98
Name and mailing address of the IPEA/  European Patent Office D-80298 Munich Tel. (+49-89) 2399-0, Tx: 523656 epmu d Fax: (+49-89) 2399-4465	Authorized officer Boletti-Cremers, K Telephone No. (+49-89) 2399-8541 

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/GB97/02907

I. Basis of the report

1. This report has been drawn on the basis of (*substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.*):

Description, pages:

1-29 as originally filed

Claims, No.:

1-7,8 (part),13 (part), as originally filed
14-17

8 (part),9-12, as received on 29/09/1998 with letter of 28/09/1998
13 (part)

2. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

4. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-13
	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-13
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-13
	No:	Claims	

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/GB97/02907

2. Citations and explanations

see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB97/02907

POINT V.

1. The following documents , quoted in the I.S.R., have been considered as relevant for the examination of the present application . Their numbering will be adhered to for the rest of the procedure.

(1) J.O.C. , vol 58, no.25, 1993, pp.7195-7203.

(2) J.C.S, Perkin Transactions 1, vol.12, 1996, pp. 1385-1392.

2. In view of the content of documents (1) and (2) (see (1) , p. 7196 , compound 17 , see (2) , p. 1388, compound 4R) , present reformulated matter according to claim 12 can now be regarded as novel, because both documents disclose the originally claimed fatty acid of formula III b where R^1 and R^2 are H, prepared otherwise as in the present application. The content of (1) and (2) being deleted from the original claimed matter according to claim 12, novelty is acknowledged. Since both (1) and (2) do not refer to the the preparation of the pyrones (I) of the present application , the remaining claims can be considered as novel and inventive in the light of said documents.

POINT VII.

- (1) The decription should be amended to correpond to the present reformulated matter (see especially p.7 of the description).
- (2) Documents (1) and (2) should be named in the description and briefly discussed.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 97/02907

A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 C07D309/32 C12P7/40 C12P17/06 C07C59/42 C07C57/03
C12N1/14 //(C12N1/14, C12R1:645, C12R1:79)

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 C07D C12P C07C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	P. WIPF ET AL.: "TOTAL SYNTHESIS OF THE STRUCTURE ASSIGNMENT OF THE ANTITUMOR ARANOROSIN." JOURNAL OF ORGANIC CHEMISTRY., vol. 58, no. 25, 1993, EASTON US, pages 7195-7203, XP002052631 see page 7195, paragraph EXPERIM. - page 7196	1, 12
X	A. MCKILLOP: "THE TOTAL SYNTHESIS OF THE DIEPOXYCYCLOHEXANONE ANTIBIOTIC ARANOROSIN" JOURNAL OF THE CHEMICAL SOCIETY, PERKIN TRANSACTIONS 1., vol. 12, 21 June 1996, LETCHWORTH GB, pages 1385-1392, XP002052632 see page 1385, paragraph EXPERIM	12

☐ Further documents are listed in the continuation of box C.

☐ Patent family members are listed in annex.

Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the international search

20 January 1998

Date of mailing of the international search report

04/02/1998

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Francois, J



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : C07D 309/32, C12P 7/40, 17/06, C07C 59/42, 57/03, C12N 1/14 // (C12N 1/14, C12R 1:645, 1:79)		A1	(11) International Publication Number: WO 98/17661
			(43) International Publication Date: 30 April 1998 (30.04.98)
(21) International Application Number: PCT/GB97/02907		SON, Neil [GB/GB]; 240 Bath Road, Slough, Berkshire SL1 4EF (GB). HAYES, Martin, Alistair [GB/GB]; 240 Bath Road, Slough, Berkshire SL1 4EF (GB). MANDER, Thomas, Haydn [GB/GB]; 240 Bath Road, Slough, Berkshire SL1 4EF (GB). (74) Agents: KEEN, Celia, Mary et al.; J.A. Kemp & Co., 14 South Square, Gray's Inn, London WC1R 5LX (GB). (81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).	
(22) International Filing Date: 21 October 1997 (21.10.97)			
(30) Priority Data: 9621859.9 21 October 1996 (21.10.96) GB			
(71) Applicant (for all designated States except US): XENOVA LIMITED [GB/GB]; 240 Bath Road, Slough, Berkshire SL1 4EF (GB).			
(72) Inventors; and (75) Inventors/Applicants (for US only): WRIGLEY, Stephen, Keith [GB/GB]; 240 Bath Road, Slough, Berkshire SL1 4EF (GB). BAHL, Sangeeta [GB/GB]; 240 Bath Road, Slough, Berkshire SL1 4EF (GB). GUILANI, Roya, Mansour, Sadeghi [GB/GB]; 240 Bath Road, Slough, Berkshire SL1 4EF (GB). MOORE, Michael [GB/GB]; 240 Bath Road, Slough, Berkshire SL1 4EF (GB). KATZER, Werner, Albert [DE/GB]; 240 Bath Road, Slough, Berkshire SL1 4EF (GB). MARTIN, Steven, Michael [GB/GB]; 240 Bath Road, Slough, Berkshire SL1 4EF (GB). KAU, David, Andrew [GB/GB]; 240 Bath Road, Slough, Berkshire SL1 4EF (GB). WHITING, Andrew, Jonathan [GB/GB]; 240 Bath Road, Slough, Berkshire SL1 4EF (GB). ROBIN-			

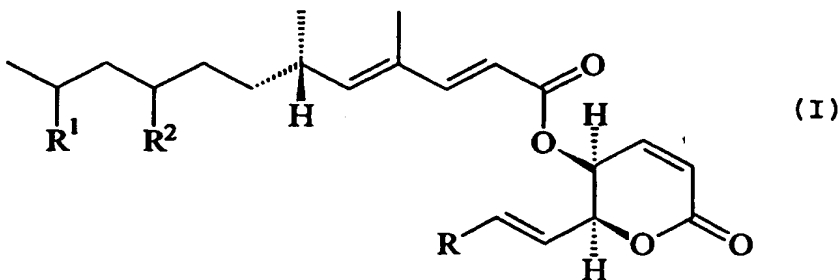
Published

With international search report.

(54) Title: CYTOKINE PRODUCTION INHIBITORS

(57) Abstract

A 5,6-dihydro- α -pyrone of formula (I) wherein R is CO₂H or CH₃ and each of R¹ and R² is H; or R is CO₂H, one of R¹ and R² is H and the other is OH; or when R is CO₂H, a pharmaceutically or veterinarily acceptable salt thereof. Processes for producing compounds of formula (I) and their use as cytokine production inhibitors are also described.



FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
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DK	Denmark	LR	Liberia	SG	Singapore		
EE	Estonia						

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference N.71868A GCW	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/GB 97/ 02907	International filing date (day/month/year) 21/10/1997	(Earliest) Priority Date (day/month/year) 21/10/1996
Applicant XENOVA LIMITED et al.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 2 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. ☐ Certain claims were found unsearchable (see Box I).
2. ☐ Unity of invention is lacking (see Box II).
3. ☐ The international application contains disclosure of a **nucleotide and/or amino acid sequence listing** and the international search was carried out on the basis of the sequence listing
 - ☐ filed with the international application.
 - ☐ furnished by the applicant separately from the international application;
 - ☐ but not accompanied by a statement to the effect that it did not include matter going beyond the disclosure in the international application as filed.
 - ☐ Transcribed by this Authority
4. With regard to the **title**, ☒ the text is approved as submitted by the applicant
 - ☐ the text has been established by this Authority to read as follows:
5. With regard to the **abstract**, ☒ the text is approved as submitted by the applicant
 - ☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this International Search Report, submit comments to this Authority.
6. The figure of the **drawings** to be published with the abstract is:
 - Figure No. _____ ☐ as suggested by the applicant. ☐ None of the figures.
 - ☐ because the applicant failed to suggest a figure.
 - ☐ because this figure better characterizes the invention.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 97/02907

A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 C07D309/32 C12P7/40 C12P17/06 C07C59/42 C07C57/03
 C12N1/14 //(C12N1/14,C12R1:645,C12R1:79)

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 C07D C12P C07C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

20 January 1998

Date of mailing of the international search report

04/02/1998

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Authorized officer

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